

SECTION 6.05 MASONRY FACING

6.05.01--Description: This item shall consist of a surface course or facing of masonry of the hereinafter specified quality, applied to the exposed surfaces of the concrete structures as a protection or ornamentation. It shall be constructed to the dimensions indicated on the plans or as ordered and in accordance with these specifications.

6.05.02--Materials: The materials for this work shall conform to the requirements of Article M.11.01 for masonry facing stone, Article M.11.04 for mortar and Article M.06.01 for metal dowels and ties.

6.05.03--Construction Methods: Each grade of masonry facing stone shall be constructed in the location and to the dimensions shown on the plans or as ordered and shall be built in conjunction with concrete backing. The backing shall not be placed until the masonry facing and any required dowels or ties have been properly placed. The work shall be carried on in successive layers or lifts as permitted by the Engineer. Care must be taken to prevent any movement of the masonry already in place while placing and compacting the concrete. When required by the Engineer, the facing stone shall be supported by such bracing and form work as may be necessary to prevent movement.

All stone shall be set by competent and experienced masons.

1--Dressing Stone: All stones shall be dressed to the required size and shape before being laid and, except in the case of granite, shall be cut to lie on their natural beds. The bottom bed shall be the full size of the stone, and no stone shall have an overhanging top. In rock-faced work the exposed surface of any stone shall not present an excessively undercut contour adjacent to its bottom arris giving a top heavy, unstable appearance when laid.

Beds and joints of dimensioned masonry stone, except for rock-faced surface finish stone, shall be fine finished a full 50 mm from the pitch line of the face from which point the bottom bed may fall under the square 80 mm in 1 m, the top bed 125 mm in 1 m; and the joints 165 mm in 1 m; but all beds must have a reasonable area of bearing spots back of the face. They shall be free from large depressions which might impair the stability of the work. On rock-faced stone, the beds shall be sawn or dressed full for at least the specified minimum width of the stone; beyond that the beds may fall under the square not in excess of 250 mm in 1 m. The joints shall be cut full and square for at least 50 mm back of the pitch lines from which point they may fall away not over 250 mm in 1 m. Headers, if called for, shall have a back dimension not less than 2/3 of the corresponding face dimension unless otherwise shown on the plans.

Beds and joints of ashlar stone shall be rough finished for a depth of not less than 50 mm in from the arris lines, and the balance of the stone shall not fall off more than 1/4 of the minimum dimension of the piece.

Holes for dowels or ties or for handling stone shall not be permitted to show in exposed surfaces.

2--Mixing Mortar: The mortar shall be hand or machine mixed as may be directed by the Engineer. In the preparation of hand mixed mortar, the fine aggregate, cement and lime, if used, shall be thoroughly mixed together in a clean, tight mortar box until the mixture is of uniform color, after which water shall be added in such quantity as to form a stiff paste. Machine mixed mortar shall be prepared in an approved mixer and shall be mixed not less than 1 1/2 minutes.

Mortar shall be used before obtaining initial set. Retempering of mortar will not be permitted.

3--Laying Stone: Stone shall not be laid when the air temperature in the shade and away from artificial heat is 5° C or below and falling, except with the permission of the Engineer and subject to such conditions as he may impose.

Dimensioned stone masonry shall be carefully and accurately constructed in accordance with the provisions of the approved plans.

Ashlar stone masonry shall be so constructed as to produce the general effect shown on the plans. As an aid in determining the required appearance, the Contractor shall lay up a sample section of wall, under the direction of the Engineer, which when approved, shall be accepted as representing the appearance to be obtained in the construction.

Each stone shall be cleaned and thoroughly saturated with water before being set. Stone shall not be dropped on or slid over the wall, but shall be carefully set without jarring stone already laid and shall be handled with a lewis or other appliance which shall not cause disfigurement. All stones shall be well bedded in freshly made mortar and settled in place with a suitable wooden maul before the setting of the mortar. Whenever possible the face joints shall be properly pointed before the mortar becomes set. Joints which cannot be so pointed shall be prepared for pointing by raking them out to a depth of about 50 mm before mortar has set. The face surfaces of stone shall not be smeared with the mortar forced out of joints or that used in pointing. No hammering, rolling or turning of stones will be allowed on the wall. Precautions shall be taken to prevent seepage of moisture, through or from the beds and joints, which may cause discoloration of the exposed surfaces.

For rock-faced stone, the course heights may vary from 0.6 m to 1.0 m with the higher courses at the bottom. Face bond shall be not less than 300 mm.

Headers shall be placed in the masonry only if so specified. They shall then be placed in each course and shall have a face length of not less than the rise of the stone. They shall bond with the core or backing not less than 300 mm. A minimum face bond of not less than 300 mm shall be maintained. In no case shall a joint occur over or under a header. Approximately 1/5 of the area of the wall shall consist of headers.

Beds and joints in dimensioned stone masonry, unless otherwise specified, shall be not less than 10 mm nor more than 20 mm in thickness and shall present a uniform appearance. Abrupt changes in the thickness of beds and joints will not be permitted.

Beds and joints in ashlar masonry shall have an average thickness of not more than 25 mm.

4--Dowels and Ties: Metal dowels and ties of the type called for on the plans or as ordered shall be installed during the placing of the stone and before the backing is placed.

5--Resetting: In case any stone is moved or the joint broken, the stone shall be taken up, the mortar thoroughly cleaned from bed and joints, and the stone reset in fresh mortar.

6--Concrete Backing: Before concrete backing is poured, the backs of all beds and joints shall be pargeted with not less than 13 mm of setting mortar. No concrete shall be poured until the pargeting mortar has set. In general, horizontal construction joints produced by successive pours of the backing concrete shall be located not less than 150 mm below the top or above the bottom bed of any course of masonry.

7--Joints: Joints shall be pointed or raked as called for on the plans or in the special provisions.

8--Pointing: Pointing shall not be done in freezing weather or when the stone contains frost.

Joints not pointed at the time the stone is laid shall be thoroughly cleaned out, wet with water and filled with mortar. The mortar shall be well driven into the joints and finished with an approved pointing tool to produce the type of joint shown on the plans or required by the Engineer. The wall shall be kept wet while pointing is being done; and in hot or dry weather, the pointed masonry shall be protected from the sun and kept wet for a period of at least three days after completion.

After the pointing is completed and the mortar set, the wall shall be thoroughly cleaned and left in a neat and workmanlike condition. The use of acid for cleaning will not be permitted.

6.05.04--Method of Measurement: This work will be measured for payment as follows:

1--Masonry Facing: The quantity of masonry facing shall be the actual number of square meters of the face area of accepted masonry facing, completed within the neat lines as shown on the plans, or as ordered by the Engineer.

When the masonry facing is backed with concrete, the quantity to be paid under the concrete item shall be determined by assuming that the facing has the average thickness stated on the plans.

2--Metal Dowels or Ties: Metal dowels or ties will be measured for payment by the number of kilograms of metal actually incorporated in the completed and accepted work in accordance with the provisions of Article 6.02.04.

3--Pointing: Unless otherwise specified, all pointing shall be included in the cost of the masonry facing. When the item of "Pointing" appears as a Contract item, measurement will be made according to the gross area of the surface to receive this treatment.

6.05.05--Basis of Payment: This work will be paid for as follows:

1--Masonry Facing will be paid for at the contract unit price per square meter for "Dimension Stone Masonry" or "Ashlar Stone Masonry," as the case may be, complete in place, which price shall include all equipment, tools and labor incidental thereto and all materials except metal dowels or ties. The cost of drilling holes for dowels or ties shall be considered as included in the general cost of the work.

2--Metal Dowels or Ties will be included with and paid for at the Contract unit price per kilogram for "Deformed Steel Bars" in accordance with the provisions of Article 6.02.05.

3--Pointing: Where the item of pointing appears, pointing will be paid for at the contract unit price per square meter for "Pointing" which shall include all materials and all other expense incidental thereto.

Pay Item	Pay Unit
Dimension Stone Masonry	m ²
Ashlar Stone Masonry	m ²
Pointing (Kind)	m ²